

*Achieving success, area by area*

Savannah River Site

Soil & Groundwater Closure Projects

Accomplishments | Fiscal Year 2003



# Our Strategy for Success

The Soil and Groundwater Closure Projects (SGCP) completed several key initiatives to accelerate the cleanup schedule. Integrated with Site D&D, SGCP embraced an area closure concept that deploys innovative technologies to achieve program completion 14 years sooner than previously planned.

While using innovative technologies has always been a cornerstone of SGCP's success, area closures became an integral part of the closure plan when the U.S. Environmental Protection Agency and South Carolina Department of Health and Environmental Control signed a Memorandum of Agreement supporting the concept.

In accelerating the cleanup schedule, SGCP revised the baseline to close a minimum of 46 waste units through 2006, adding another 29 for a total of 75 waste unit closures as a goal. These closures will be completed without compromising worker safety. In 2003, 23 waste sites were safely closed, exceeding the goal of 13.

Our success in 2003 was a fitting display of teamwork by all parties working with SGCP.



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Acting Assistant  
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DOE-SR



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Area Project Manager  
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WSRC



*Workers install equipment in preparation for another grout pour at the Old Radioactive Waste Burial Ground solvent tank closure project.*

## General Separations Projects

### General Separations Area Consolidation Unit

Grout activities were completed at the 10 remaining underground solvent tanks in the Old Radioactive Waste Burial Ground (ORWBG), the program's highest risk site. Site preparation and remedial design was completed at the General Separations Area Consolidation Unit (GSACU) in preparation for remedial action. The GSACU was formed last year when three nearby waste unit closures were consolidated with the ORWBG closure. The GSACU accelerates closure of the four individual waste units by two years and achieves 99 percent risk reduction to future site workers when completed.

### Ford Building Seepage Basin

The final remedial action for the Ford Building Seepage Basin was completed when the remaining contaminated soil from an earlier underground tank removal action was excavated. The contaminated soil was placed on the basin floor with similar insignificant contamination. The basin was then filled and covered with native soil. The action marked the closure of 300 waste units, over half of the program's original 515 waste units.

### TNX Operable Unit

The Record of Decision (ROD) for the TNX Operable Unit (OU) was submitted to the U.S. Environmental Protection Agency (USEPA) and the South Carolina Department of Health and Environmental Control (SCD-HEC) for review and approval. The unit's cleanup remedy was integrated with building demolition activities as part of the T-Area closure concept. Construction activities for the TNX OU cleanup remedy are scheduled to begin in September 2004.





*The installation of a steam line was completed during the early phases of the Dynamic Underground Stripping construction schedule. DUS will use SRS-generated steam to remove dense solvents from subsurface soils and groundwater.*

*Dynamic  
Underground  
Stripping  
accelerates  
cleanup  
of the A/M  
Groundwater  
Plume  
by decades.*

## Upper Three Runs Projects

### **M-Area Dynamic Underground Stripping**

The project team is halfway through the construction of the Dynamic Underground Stripping (DUS) project at the M-Area Settling Basin. Construction is scheduled for mechanical completion in September 2004. It is estimated that one million pounds of solvents will be removed from the subsurface over three years of operation. DUS is a key part of the M-Area closure and accelerates cleanup of the A/M groundwater contamination plume by decades.

### **D-Area Expanded Operable Unit**

Field investigations and risk assessments to determine both the extent of contamination and associated risks at the D-Area Expanded Operable Unit (DEXOU) are complete. Extensive Core Team planning to select remedial alternatives has allowed acceleration of this project to meet construction completion by September 2006. The scope of this waste unit includes two major inactive waste units (488-D Ash Basin and D-Area Rubble Pile) and five smaller inactive subunits. The remaining active D-Area units will begin remediation in 2015 when the coal-fired power plant ceases scheduled operations.

### **A-Area Miscellaneous Rubble Pile**

Remediation activities, including soil removal, are under way at the A-Area Miscellaneous Rubble Pile. The field investigation and characterization identified construction rubble and ash material as primary waste concerns. Final remediation will include a one-foot soil cover (about 6,000 cubic yards) and an active soil vapor extraction technology to remove solvents from the subsurface soils.



# Reactors Projects

## L-Area Reactor Seepage Basin

Construction crews completed this site, installing a low permeable soil cover as the final remedy. The remediation is part of a Plug-In ROD that closes similar radioactive contaminated seepage basins using a common approach. Closure of the reactor basins significantly reduces potential groundwater contamination.

## L-Area Burning Rubble Pit and Pile

The project team completed remedial action at the L-Area Rubble Pit and Pile approximately four months ahead of schedule. The hazardous waste was removed and shipped to an offsite permitted hazardous waste disposal facility, and the non-hazardous waste was sent to a local landfill. Completion of the remedial action protects both future industrial workers and the ecological system.

## Integrator Operable Units

The Integrator Operable Unit (IOU) program consists of six surface water bodies (five site streams and the Savannah River), each requiring a three-phase closure process. The last Phase I Remedial Investigation Work Plan in the IOU program was completed and approved by the regulators. Phase I objectives have been established to:

- assess whether current IOU contamination poses an imminent and substantial risk to human health and the environment;
- determine the need for and implementation of early actions; and
- define additional data needs to make early action decisions and begin building a database to support preparation of the final Baseline Risk Assessment.

Phase II objectives include ongoing sampling, assessments, and reporting of each IOU in parallel with other waste site closures in the SGCP program. Phase III completes the ROD and final closure process for each IOU and does not begin until all waste units are completed within their respective watershed.

*Closure of the L-Area reactor seepage basin significantly reduces potential groundwater contamination.*





*The mobile Soil Vapor Extraction Unit removes solvents from subsurface soils.*

## Operations and Stewardship

### Operations Team

The Operations Team conducted operations and maintenance at 13 remedial groundwater treatment systems and completed soil vapor extraction operations at the Miscellaneous Chemical Basin. The team achieved operational system efficiency above 99 percent at these treatment systems, exceeding all permit requirements. Disciplined operations resulted in 29 Positive Interventions among co-workers that precluded negative environmental and safety consequences and avoided additional expenses.

The Waste Management group handled wastes from operations of treatment systems and several large remedial actions undertaken by the project teams. Approximately 15,000 cubic feet of low-level radioactive waste, 17,000 cubic feet of hazardous and mixed waste, and 78,000 cubic feet of CERCLA sanitary waste were characterized, packaged, and shipped to proper disposal facilities.

### Long-Term Stewardship Program

Many of the completed waste sites are now in the Long-Term Stewardship Program. Of the 300 completed waste sites, 27 are in the inspection and maintenance program.

Inspections vary from monthly to annually. The program also includes scheduled inspections and maintenance activities on more than 2,000 groundwater monitoring wells statewide.

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# Safety and Stakeholder Communications

## Working Safely and Reducing Risk

SGCP continues to work safely while reducing risk to site workers, the public, and the environment. The SGCP closure program closes inactive waste sites and improves the quality of groundwater, site streams, and the Savannah River while setting worker safety records. On September 30, 2003, SGCP completed six consecutive years (i.e., 5.3 million hours) without a single worker missing a day of work due to a job-related injury or illness.

## Strong Stakeholder Relationships

Strong working relationships among SGCP, the Department of Energy (DOE), USEPA, and SCDHEC continue to thrive through open and frequent communications. The core team of DOE, USEPA and SCDHEC is very effective in streamlining and combining decision documents to perform fieldwork faster at lower costs. The SRS Citizens Advisory Board maintains involvement in SGCP cleanup activities through regular meetings with SGCP and other SRS personnel.



## Conferences and Tours

SGCP hosted the fifth Environmental Restoration Technology End User Conference in Columbia, South Carolina. The conference gave regulators an opportunity to meet with technical personnel and to get a firsthand view of state of the art environmental cleanup technology. The conference culminated with a tour of several closure sites at SRS. SGCP also conducted tours and briefings for various organizations throughout the year.



*ERTEC guests tour the M Area Settling Basin and future site of DUS.*



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